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# NOAA: A LEGACY of COOPERATIVE CONSERVATION

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## Of Special Note

[Admiral Lautenbacher  
Announces New  
"Open Rivers Initiative."](#)

*"AMERICANS HAVE A LONG TRADITION of conservation and stewardship of our Nation's lands and other natural resources. Over the last three decades, we have made remarkable progress, working together to meet our conservation goals and improve the quality of our air and water. Local involvement is critical to ensuring successful, effective, and long-lasting conservation results."*

— PRESIDENT GEORGE W. BUSH

This site provides a sense of the diverse and critical NOAA programs that contribute to NOAA's legacy of cooperative conservation. Cooperative conservation draws on the resources of federal, state and local partnerships to improve environmental protection and natural resource management, and to achieve the goals of shared governance and citizen stewardship.



In August of 2004, President Bush signed an [executive order](#) directing the federal agencies involved in environmental policy to actively promote cooperative conservation. On August 29-31, 2005, invited representatives from the public and private sectors will meet in St. Louis, Missouri to share experiences and expertise, and to advance the cooperative conservation vision. Cases studies presented on this site will be highlighted in breakout sessions at the conference. For more information on the conference, please visit the [White House Council on Environmental Quality](#).

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## NOAA's Role

*NOAA has a long history of cooperative conservation. From improving habitat and rebuilding fishery stocks to helping mitigate the effects of drought and reduce the damage from natural disasters, NOAA has always relied on partnerships to help achieve its mission. By drawing on outside expertise and experience, NOAA is able to multiply the benefit of its programs.*

The following list is hardly exhaustive of NOAA's cooperative conservation efforts, but it is a sampling of the major programs. NOAA's efforts, which address the bottom of the ocean to the outer reaches of the atmosphere, are as diverse as its mission.

[National Weather Service](#)  
[Office of Oceanic and Atmospheric Research](#)  
[National Marine Fisheries Service](#)  
[National Ocean Service](#)  
[Interagency Initiatives](#)

### National Weather Service

[NOAA's National Integrated Drought Information System](#) (NIDIS) provides decision-makers with the best tools to manage scarce water resources and ensure an adequate supply of clean water for the nation. The NIDIS vision is to provide a dynamic and accessible drought information system that provides users, from the national to local levels, the ability to determine the potential impacts of drought and the associated risks they bring. Additional details about NIDIS can be found in this June 2004 report: "[Creating A Drought Early Warning System for the 21st Century: The National Integrated Drought Information System.](#)"

### Office of Oceanic and Atmospheric Research

[Sea Grant](#) is NOAA's primary university-based program. It uses research and outreach programs to strengthen state and federal partnerships, and to promote better understanding, conservation, and use of America's coastal resources.

[Smart Growth](#) - NOAA partners with EPA on the Smart Growth program to help coastal communities grow in ways that benefit the economy, public health, and the environment.



A sea gull takes in the view at the San

### [Nonpoint Education for Municipal](#)

[Officials](#) helps local officials use technology, such as GIS and statistical analyses, to link land use and water quality in planning decisions.

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## **National Marine Fisheries Service**

[Marine mammal bycatch reduction](#) – NOAA works with stakeholders, academia, and government partners to develop take-reduction plans aimed at reducing bycatch in fisheries with minimal interference or impact to the fisheries.

[Seabird bycatch reduction](#) - NOAA Fisheries, the U.S. Fish and Wildlife Service, and the commercial fishing industry collaborate in a program to promote seabird conservation by reducing or eliminating seabird bycatch in commercial fisheries.

[NOAA Fisheries Enforcement Cooperative Enforcement Program](#) disperses funds to coastal state and U.S. territory marine-conservation law-enforcement agencies, in return for enforcement of federal conservation laws by federally deputized state conservation officers.

The [Office of Habitat Conservation](#) has a multitude of programs that use partnerships to manage, conserve, and enhance habitats for fishery resources, protected species, and other living marine resources.



Seabirds (mostly northern fulmars) congregate around the *F/V Frontier Mariner*, a commercial longline vessel.

### [NOAA's Community-based Restoration](#)

[Program](#) is a financial and technical assistance program that supports locally driven habitat restoration projects in marine, estuarine, and riparian areas. The program funds on-the-ground habitat restoration projects that (1) offer educational and social benefits for citizens and their communities, and (2) provide long-term ecological benefits for fishery resources.

[NOAA's Damage Assessment and Restoration Program](#) is responsible for assessing and restoring coastal and marine resources injured by oil spills, hazardous substance releases, and vessel groundings. Through the Cooperative Assessment Process, they regularly convene industry, government, and conservation groups to identify methods for improving assessment, reducing costs, and restoring resources faster and more effectively. The cooperative framework offers industry an effective way to resolve pollution liability without undermining NOAA's responsibilities as a natural resource trustee for coastal and marine resources.

[NOAA's Fisheries Service Northeast Region's Cooperative Research Partners Program](#) expands collaborative research among New England's commercial fishing industry, marine science, and fishery management communities. The

goal of this program is to enhance the data upon which fishery management decisions are made, as well as to facilitate communication and collaboration among New England commercial fishermen, scientists, and fishery managers. Through this program, partners collaborate with the New England Fishery Management Council in setting research priorities to meet management and fishing industry needs.



A young volunteer helps plant sea grasses.

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## National Ocean Service

The [National Marine Sanctuaries Program](#) relies on hundreds of partnerships, including many at the state and local government level, which focus on education, resource management, and science activities.

The [National Estuarine Research Reserve System](#) (NERRS) is a partnership program between NOAA and the coastal states that protects more than one million acres of estuarine land and water. The NERRS provides essential habitat for wildlife; offers educational opportunities for students, teachers and the public; and serves as living laboratories for scientists.

[NOAA's Office of Response and Restoration](#) helps emergency planners prepare for potential accidents; responds to dozens of spills of oil and other hazardous materials each year; assesses injury to coastal resources from releases of oil, other hazardous materials, vessel groundings, and abandoned vessels; and works with local partners to pursue restoration from those responsible for the harm.



Oil spill clean-up workers vacuum up thick, heavy oil from a sandy beach.

[NOAA's Marine Debris Program](#) is working with external partners to undertake a national and international effort focusing on identifying, removing, reducing, and preventing debris in the marine environment.

The [Coastal Services Center](#) works with various branches of NOAA and other federal agencies to bring information, services, and technology to the nation's coastal resource managers. The Center is a partner in over 100 ongoing projects geared to resolve site-specific coastal issues.

[Marine Protected Areas](#) (MPAs) in the United States are widely used as a tool for conserving the nation's wealth of natural and cultural resources for all Americans. These resources, including coral reefs, kelp forests, whales, shipwrecks, and a wide variety of marine life in the oceans, coasts, and Great Lakes, are vital to the economic sustainability of the nation for this and future generations.

[The Coastal Zone Management Program](#) is a federal-state partnership dedicated to comprehensive management of the nation's coastal resources, ensuring their



protection for future generations while balancing national economic, cultural, and environmental interests.

#### NOAA's Coral Reef Conservation Program

(CRCP) - From mapping and monitoring to managing reef resources and removing harmful debris, NOAA's CRCP supports effective management and sound science to preserve, sustain, and restore valuable coral reef ecosystems.

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### **Interagency Initiatives**

Estuary Restoration Act - As a member of the Estuary Habitat Restoration Council, NOAA is part of an interagency effort to create and maintain effective partnerships for the promotion of estuary habitat restoration, and develop and enhance restoration monitoring and research capabilities. In support of these efforts, NOAA is promoting regional restoration planning efforts, assessing habitat trends, working to evaluate restoration techniques, and developing innovative technologies for restoration and restoration monitoring.

Coastal America is a unique partnership of federal agencies, state and local governments, and private organizations. The partners work together to protect, preserve, and restore our nation's coasts. Through participation in the National and Regional Implementation Teams, NOAA contributes to the efforts of this partnership.

The National Fish Habitat Initiative is a nationwide strategy that harnesses the energies, expertise and existing partnerships of state and federal agencies, and conservation organizations. NOAA is currently participating in a number of work groups to aid in the development of a National Fish Habitat Plan.

The Great Lakes Regional Collaboration is a wide-ranging, cooperative effort to design and implement a strategy for the restoration, protection, and sustainable use of the Great Lakes. A framework was developed to guide the collaboration process designed to develop, by consensus, a strategy and action plan to restore and protect the Great Lakes. Since then, the Collaboration has developed a draft action plan of concrete steps to restore and protect this national treasure.

More than 1,500 people representing federal, state, local and tribal governments; nongovernmental entities; and private citizens have participated on eight issue-specific strategy teams to develop this proposed action plan. NOAA has representatives on each of the strategy teams and is participating in numerous activities to support the development of the action plan and the overall regional collaboration effort.

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When caught in fishing nets, sea turtles cannot get to the surface to breathe and often drown.



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## Case Studies

*The following case studies are examples of cooperative conservation at its best. In each project, NOAA worked closely with the affected communities to help overcome environmental challenges. Because of their success, they will be featured at breakout sessions at the Conference on Cooperative Conservation.*

**Open Rivers Initiative** - Over 2 million small dams block the life-preserving passage of migratory fish in U.S. streams and rivers. Dams provide numerous benefits for modern society, but they also contribute to the overall degradation occurring in estuaries, deltas, and river environments. With a life expectancy of about 50 years, scores of dams have outlived their usefulness--dilapidated and decrepit they have become a safety hazard and ...([more](#))

**Bronx River Cement Plant Site Restoration** - At one time, the Bronx River was so "pure and wholesome" that New York City officials considered using it to supply the city with drinking water. However, during the industrial revolution of the 19th century, the river valley was turned into an industrial corridor, and became what one official commission called an "open sewer." Due to the nearly complete channelization and armoring of its banks, the intertidal portion of the Bronx River shows little of the vegetation that once dominated its shores. Stretches of bulkhead, sheet piling...([more](#))

**Hawaii Coral Reef Native Algae Restoration** - *Removing Alien Invaders Smothering Hawaii's Reefs* - Hawaii's reefs are home to an abundance of marine invertebrates and fishes, many of which are found only in Hawaii. One of the greatest threats to the coral reefs and other marine ecosystems is the spread of invasive, non-native marine algae, specifically *Gracilaria salicornia*, also known as gorilla ogo. This species of algae was a good source of...([more](#))

**Northwest Straits Marine Conservation Initiative** - *Restoring and Conserving Puget Sound* - Historically, Puget Sound in northwest Washington State has been habitat for a range of critical marine and anadromous species, and its fishery plays a vital role in the regional economy. By the mid-1990's, the quality of the fishery was rapidly degrading, threatening both marine and freshwater species, as well as human communities dependent on the natural resources of the Sound. In response to the environmental and economic crisis facing Puget Sound, Congress established...([more](#))

**Olympia Oyster Restoration Project** - *Re-seeding the Northwest's Only Native Oyster* - With natural habitat ranging from Alaska to Mexico, the Olympia oyster is the only oyster native to the Pacific Northwest. For thousands of years, the oyster provided sustenance for tribes, and habitat for a host of marine organisms. Because it is a filter feeder, it improves water

- quality as it filters food from the water. Until the end of the nineteenth century, it was the most abundant bivalve in the Puget Sound, but over-harvesting, sediment loads, and pollution... ([more](#))
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## News Releases

Click on the links below to access press releases related to NOAA's involvement in cooperative conservation.

[January](#) | [February](#) | [March](#) | [April](#) | [May](#) | [June](#) | [July](#)

### July

July 27, 2005

#### [NOAA Awards More Than \\$2.5 Million for Coastal Management in Maine](#)

This funding supports projects in areas such as managing shoreline development, implementing coastal resource protection authorities, enhancing citizen stewardship, conserving coastal habitat, improving coastal water quality, managing dredging activities, and providing public access and recreational opportunities.

July 27, 2005

#### [NOAA Awards More Than \\$2.6 Million to Support Coastal Management in Florida](#)

The Florida Coastal Zone Management Program balances the demands of industries, such as tourism and agriculture, with the need to protect the long-term health of the environment. It also provides state programs to conserve coastal habitat, and protect coastal assets such as coastal wetlands, estuaries, and some of the most beautiful beaches in the world.

July 27, 2005

#### [NOAA Awards Over \\$2.1 Million to Support Coastal Management Efforts in Hawaii](#)

This grant will continue funding for the administration and execution of the state's federally approved Coastal Zone Management Program, which encompasses the entire state.

7/19/2005

## [NOAA Officials Outline Support for Gulf States Alliance as Part of President's Ocean Action Plan](#)

Officials from the NOAA outlined several areas where NOAA is playing a lead role in supporting the five Gulf States, addressing coastal environmental challenges as part of the U.S. Ocean Action Plan.

7/14/2005

## [NOAA to Develop National Strategy for Studying, Protecting Deep-Sea Corals and Sponges](#)

The National Oceanic and Atmospheric Administration announced plans to develop a comprehensive, national strategy for long-term research and conservation of deep-ocean coral and sponge habitat.

7/7/2005

## [NOAA Chief Praises Shared Strategy's Puget Sound Salmon Plan, Calls It a Historic Accomplishment](#)

The head of NOAA today said a draft recovery plan for Puget Sound Chinook submitted to the agency by Shared Strategy for Puget Sound is a "historic accomplishment."

7/6/2005

## [NOAA Awards \\$2.6 Million to Support Coastal Management in New York](#)

The grant will support the state's federally approved management plan, which covers New York's 2,625 miles of coast. The New York Coastal Zone Management Program balances the demands of industries such as tourism, fishing, and shipping with the need to protect the long-term health of the environment.

7/1/2005

## [NOAA Awards More Than \\$1.4 Million to Louisiana Sea Grant](#)

This grant through NOAA's Sea Grant College Program will focus on developing knowledge, technology, personnel, and public understanding to advance the sustainable and economically viable use of marine and coastal environments and resources. Specific research will emphasize fisheries, aquaculture, coastal and wetland resources, and seafood products.

7/1/2005

## [NOAA Awards More Than \\$1.3 Million to Delaware Sea Grant](#)

This grant through NOAA's Sea Grant College Program will focus on research, education, and outreach projects to help people throughout the state and region to wisely use, manage, and conserve Delaware's ocean and coastal resources.

7/1/2005

### [NOAA Awards More Than \\$1.4 Million to Alaska Sea Grant](#)

This grant through NOAA's Sea Grant College Program will focus on bolstering the long-term value of Alaska's marine resources by funding scientific research on marine ecosystems, and the effects of human activity and natural environmental changes on ocean resources.

7/1/2005

### [NOAA Awards \\$90,000 to Restore Fishery Habitat in Florida](#)

NOAA awarded \$90,000 to the Florida Department of Environmental Protection for a community-based project to restore fishery habitat in the Lignumvitae Key Submerged Land Management Area in the Florida Keys.

7/1/2005

### [NOAA Gives Calais, Maine Observatory the First Preservation Partnership Disk](#)

On July 2, 2005, representatives from NOAA, and other government officials, will designate the Calais Observatory with the first Preservation Partnership disk during a ceremony in Calais, Maine. The disks are intended to encourage and promote public-private partnerships, while bringing public attention to the importance of preserving the nation's natural resources and historic sites.

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## **June**

6/29/2005

### [Students Participate in Summer Weather Research Programs](#)

Students from colleges and universities around the country are spending their summer working with the nation's top weather researchers and forecasters from NOAA and the University of Oklahoma in Norman.

6/24/2005

### [NOAA Awards \\$54,834 for Georgia Oyster Habitat Restoration](#)

This project, Generating Enhanced Oyster Reefs in Georgia's Inshore Areas, will build upon the previous success of the University of Georgia's oyster shell recycling and reef restoration program, which set up shell recycling centers, and built five reefs in the greater Savannah area. This year's project will expand efforts beyond the Savannah area to Georgia's entire coast. In addition, the project involves constructing five publicly visible oyster reefs, and assisting waterfront property owners in building reefs and restoring oysters in their own backyards.

6/24/2005

### [NOAA Awards \\$100,000 to County of Sacramento to Remove Invasive Plant Species](#)

This year's funding supports a project that builds on the success of a prior three-year effort aimed to eradicate the ten most invasive species in the

American River Parkway, a 23-mile, 5,000-acre park along the American River in Sacramento, California.

6/22/2005

[NOAA Fisheries Service Proposes Improved Guidelines for Fishery Management Decisions](#)

NOAA Fisheries Service proposed improved guidelines to help fishery managers implement National Standard One of the Magnuson-Stevens Fishery Conservation and Management Act. National Standard One requires fishery managers to prevent over-fishing and rebuild stocks in federal waters — from three to 200 miles off U.S. coasts — while achieving the optimum yield from each fishery.

6/22/2005

[NOAA'S Farallones National Marine Sanctuary Needs Volunteer Monitors for Central Coast Shores](#)

NOAA 's Gulf of the Farallones National Marine Sanctuary is calling for volunteers for its Beach Watch monitoring program. Beach Watch is a long-term research project of the Farallones National Marine Sanctuary and is coordinated by the non-profit Farallones Marine Sanctuary Association.

6/22/2005

[NOAA Awards Nearly \\$2 Million to Wisconsin Sea Grant](#)

This grant through NOAA's Sea Grant College Program will focus on research, education and outreach, relating to marine sciences in Wisconsin and the Great Lakes region. Specific programs will emphasize aquaculture and seafood technology, biotechnology, estuarine and coastal processes, living resources, microcontaminants and water quality, policy studies and diver safety.

6/21/2005

[NOAA Awards More Than \\$1.3 Million to the University of Southern Mississippi for Oyster Research](#)

This grant will support research to determine the integrity of using high intensity x-ray irradiation as a means of treating shell stock oysters to eliminate *Vibrio* pathogens.

6/17/2005

[NOAA Awards \\$500,000 to FishAmerica Foundation to Restore Coastal Fisheries Habitat](#)

This grant will continue a program between the FishAmerica Foundation and NOAA's Restoration Center to conduct habitat restoration projects that benefit recreational sportfish throughout the coastal United States. The goal of this multi-project partnership is to implement meaningful on-the-ground habitat restoration of marine, estuarine and riparian areas.

6/16/2005

### [NOAA Awards More Than \\$700,000 to the University of North Carolina, Wilmington](#)

This grant supports the NOAA Undersea Research Program at the University of North Carolina at Wilmington, which uses scientists from all over the world to complete more than forty projects each year.

6/16/2005

### [Administration Bill Update Protections for Marine Animals](#)

This proposed legislation fulfills a goal of the administration's U.S. Ocean Action Plan. The bill's major amendments would strengthen initiatives to reduce marine mammal bycatch, clarify the definition of marine mammal harassment for the regulated community and the public, and enhance the Act's enforcement capabilities.

6/14/2005

### [NOAA Volunteers and Partners Join in Chesapeake Bay Restoration Program](#)

Volunteers planted 54 trays of underwater grasses previously grown in NOAA offices around the region. They also installed 5,400 wetlands plants, distributed 100 bags of native oysters, and removed invasive species from the water's edge. All together these projects will help restore more than 1,000 feet of highly eroding shoreline.

6/7/2005

### [Bush Administration Releases National Offshore Aquaculture Bill](#)

The President pledged to propose this bill in the 109th Congress as part of his U.S. Ocean Action Plan, which outlines near-term and longer-term actions to protect our oceans and marine resources.

6/6/2005

### [NOAA Awards \\$700,000 to the Nature Conservancy](#)

The Nature Conservancy is partnering with the NOAA Restoration Center to implement innovative restoration projects benefiting marine, estuarine, and riparian habitats on both U.S. coasts and in the Gulf of Mexico, Alaska, and Hawaii.

6/2/2005

### [NOAA And Nauticus Unveil New 3-D Multi-media Exhibit at the National Maritime Center](#)

NOAA and Nauticus, The National Maritime Center, today unveiled an imaginative and dynamic 6-foot globe that shows 3-D animated images of how the oceans and atmosphere interact to produce our weather and climate.

6/1/2005



## [NOAA Fisheries Service Recovery Plan for Endangered North Atlantic Right Whales](#)

The recovery plan highlights the necessity of reducing or eliminating right whale deaths and injuries from shipping and commercial fishing operations. The plan also recommends protecting important habitat, monitoring the distribution and abundance of the species, and conducting further studies to assess the health of the species.

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## **May**

5/27/2005

## [Sea Scallop Gear Change Proposed to Protect Sea Turtles](#)

NOAA Fisheries Service today proposed a change for sea scallop gear that will prevent loggerhead sea turtles from entering dredges, where they can be injured or killed during fishing operations.

5/13/2005

## [NOAA Awards \\$200,000 to Restore Salmon Habitat in California](#)

This NOAA award will allow more than 300 California Conservation Corps members to implement habitat restoration projects along California streams and estuaries.

5/6/2005

## [NOAA \\$1.9 Million Grant Will Restore Estuaries From Maine to Washington](#)

Through this award, Restore America's Estuaries will implement community-based habitat restoration projects benefiting marine, estuarine and riparian habitats in the Gulf of Maine, Narragansett Bay, Long Island Sound, Hudson-Raritan Estuary, Chesapeake Bay, Albemarle and Pamlico Sounds, Tampa Bay, Louisiana's Mississippi Delta, Galveston Bay, San Francisco Bay, and Puget Sound.

## **April**

4/27/2005

## [Administration's Salmon Recovery Efforts Remain on Track](#)

Thanks to an emphasis on cooperative conservation, local recovery planning and technological improvement, salmon in the northwest are continuing a trend of six straight years of strong returns.

4/26/2005

## [NOAA Great Lakes Lab on Mission to Lake Erie Dead Zone](#)

NOAA's Great Lakes Environmental Research Laboratory, in collaboration with researchers in the U.S. and Canada, will lead one of the largest, most comprehensive Lake Erie research field programs.

4/25/2005

[NOAA, Partners Expand Tao Array Into the Indian Ocean as Global Earth Observing System Grows](#)

The system of moored buoys in the Pacific that has helped predict El Niño events is being expanded into the Indian Ocean to help improve the understanding of the climate system in that region. Scientists from NOAA are working with international climate scientists to develop a plan for such a system.

4/21/2005

[NOAA Biologists Start Seagrass Restoration in Florida Keys National Marine Sanctuary](#)

NOAA biologists are working with several contractors, including Seagrass Recovery, Inc. and Adventure Environmental, to place more than 350 cubic meters of native crushed limestone, enough to fill nearly seven backyard swimming pools, in blowholes created by the Myra Lee, the Dream On, and an unknown vessel.

4/20/2005

[NOAA Responds to Mock Ship Grounding and Oil Spill in Florida Keys National Marine Sanctuary](#)

NOAA, the U.S. Coast Guard and the Florida Department of Environmental Protection responded to a simulated ship grounding and oil spill in the Florida Keys National Marine Sanctuary. The first-ever Safe Sanctuaries emergency response drill was designed to improve the agencies' ability to protect the environment and the public in the event of an incident.

4/18/2005

[NOAA Fisheries Delivers Washington Lower Columbia Salmon Recovery Plan](#)

The plan is the first ever, comprehensive science-based recovery plan to be endorsed by NOAA for the recovery of three species of Endangered Species Act-listed salmon and steelhead in the Pacific Northwest.

4/13/2005

[NOAA Chief Leads 100 Volunteers in Restoring Tidal Wetlands of Fort McHenry on Saturday](#)

The director of the nation's top science agency for oceans and the atmosphere, Conrad C. Lautenbacher, Jr., will lead 100 volunteers from the Commerce Department's National Oceanic and Atmospheric Administration in the annual tidal wetland restoration at historic Fort McHenry in Baltimore's inner harbor on Saturday, April 16.

4/12/2005

### [NOAA Awards \\$275,000 to Trout Unlimited](#)

The grant supports a three-year partnership between Trout Unlimited and the NOAA Restoration Center for habitat restoration projects that benefit commercial fisheries resources and recreational sportfish. The partnership will engage citizens in local habitat restoration projects that benefit cold-water fisheries, such as placement of wood in spawning streams and removal of out-dated dams.

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## **March**

3/26/2005

### [Volunteers Count Whales From the Shores of O'ahu, Kaua'i, the Big Island and Kaho'olawe](#)

More than 430 volunteers gathered data from the shores of O'ahu, Kaua'i, the Big Island, and Kaho'olawe at Saturday's annual Hawaiian Islands Humpback Whale National Marine Sanctuary Ocean Count to tally sightings and document surface behaviors of the endangered humpback whales.

3/4/2005

### [NOAA Awards \\$1.4 Million to South Carolina Sea Grant](#)

NOAA awarded \$1.4 million today to the South Carolina Sea Grant Consortium to further its mission of coastal environmental stewardship, education, and community involvement.

## **February**

2/17/2005

### [NOAA Rolls Out Recreational Fisheries Strategic Plan](#)

With input from recreational fishing constituents, the NOAA has developed a plan defining a common vision for the future of recreational fisheries and a strategy to achieve that vision.

2/14/2005

### [NOAA Awards More Than \\$900,000 to Continue Development of Caribbean Fishery Management Plans](#)

The funding will support the council's activities as outlined in the Magnuson-Stevens Fishery Conservation and Management Act, which places responsibility for the conservation and management of fishery resources in specific regions to appointed regional councils.

2/14/2005

[NOAA Awards More Than \\$1.4 Million to Continue Development of Fishery Management Plans in the South Atlantic](#)

NOAA announced a \$1,435,978 grant to continue the creation and implementation of fishery management plans by the South Atlantic Fishery Management Council.

2/14/2005

[NOAA Awards More Than \\$2 Million to Support Fishery Management and Conservation Efforts in the North Pacific](#)

NOAA announced a \$2,090,518 grant to support the continued operation and administrative activities of the North Pacific Fishery Management Council, which works to manage and conserve fishery resources off the coast of Alaska.

2/14/2005

[NOAA Awards More Than \\$1.9 Million to Continue Fishery Management and Conservation Efforts Off the West Coast](#)

NOAA announced a \$1,960,278 grant to support the continued creation and implementation of fishery management plans and conservation activities by the Pacific Fishery Management Council.

2/14/2005

[NOAA Awards \\$2.7 Million to Support Fishery Management and Conservation Efforts in New England](#)

NOAA awarded a \$2,798,251 grant to the New England Fishery Management Council to support the continued creation and implementation of fishery management plans and conservation efforts.

2/14/2005

[NOAA Awards More Than \\$1.7 Million to Support Gulf of Mexico Fishery Management and Conservation Efforts](#)

NOAA awarded a \$1,729,854 grant to the Gulf of Mexico Fishery Management Council to support the continued creation and implementation of fishery management plans and conservation efforts.

2/8/2005

[Pennsylvania Moves Forward on Sea Grant Status](#)

Pennsylvania is half way in its progress to attain full college status within the National Sea Grant College Program.

2/7/2005

[NOAA Awards \\$1.7 Million to Restore Oyster Resources in Florida](#)

This grant will fund the restoration and enhancement of Florida's natural oyster reefs that were damaged during Hurricane Ivan. Oyster reefs will be

identified for restoration in Escambia Bay, East Bay (Santa Rosa County), Choctawhatchee Bay, West Bay, North Bay, East Bay (Bay County) and Apalachicola Bay.

2/7/2005

[NOAA Awards \\$1.4 Million to Improve Oyster Resources in Louisiana](#)

This grant funds the Oyster Resource Improvement Project, which aims to restore the oyster population and habitat to pre-Ivan conditions.

2/7/2005

[NOAA Awards \\$4.3 Million to Restore Resources in Alabama](#)

This grant will fund the restoration and enhancement of Alabama's natural oyster reefs that were damaged by strong tides and currents during Hurricane Ivan.

**January**

1/27/2005

[EPA, NOAA Will Help Coastal Communities with Coastal Growth, Development Issues](#)

The U.S. Environmental Protection Agency and NOAA agreed to work together to help coastal communities grow in ways that benefit the economy, public health, and the environment.

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## About the Web Site

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### Purpose and Organization

NOAA: A Legacy of Cooperative Conservation highlights NOAA's cooperative conservation activities through five case studies presented on the site. This Web site is organized into three sections -- NOAA's Role lists a sampling of NOAA's cooperative conservation efforts by program office; Case Studies presents five specific examples of NOAA working closely with communities to overcome environmental challenges; and News Releases.

### Accessibility

Every attempt has been made to make this site compliant with Section 508 of the Americans with Disabilities Act. Additionally, we have provided a link to a detailed Site Index on every page. This index provides a direct link to all the pages in the site.

Please notify us of any specific accessibility problems that you encounter, or any suggestions you might have on how we could improve the site's access. Please email comments and suggestions to: [conservation.conference.web@noaa.gov](mailto:conservation.conference.web@noaa.gov).

### Technical Information

**Browsers.** This site is best viewed in Netscape, version 6.0 and above, or Internet Explorer, version 5.0 and above. Web site visitors using earlier versions of these browsers may encounter occasional format anomalies when viewing and printing pages from the Web site. Performance of this site has not been tested on browsers other than Netscape and Internet Explorer.

**Links.** External sites that are accessed by these links will launch a new browser session in a single, separate browser window. A limited number of links to non-U.S. government sites are included. Users are notified that they are leaving a U.S. government Web site by a separate page that appears on screen for approximately 20 seconds.

**Fonts and Type Sizes.** Verdana is the default font for this site; 9 point is the default size. All browsers allow users to select specific fonts and type sizes for display. Some users select large type sizes for ease of reading, or specific fonts for personal tastes. The text and layout should not be adversely affected by a user's selection of alternative fonts and type sizes.

**Printing Pages.** This site has been designed to ensure simple printing in portrait format.

**Downloadable Documents.** Some documents are available on this site as downloadable files in Portable Document Format (PDF). These files can be viewed on microcomputers equipped with recent versions of Adobe Acrobat Reader. Adobe Acrobat Reader can be downloaded for free.

There are some known issues with downloading PDF documents, particularly on Windows systems, due to conflicting changes in the way in which Acrobat Reader and various browsers talk to one another. But there is a simple work-around: if you right-click (Windows) or option-click (Macintosh) on the link, the entire file will be sent to your machine, and then you can open it off your own hard drive using Acrobat Reader.

**Index.** A link to the site index appears on every page. The site index is a complete listing of every page on the site and includes links to each of those pages.

**For Further Technical Information.** For questions or comments about the technical aspects of this site, e-mail: [nos.webadmin@noaa.gov](mailto:nos.webadmin@noaa.gov).

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## Case Studies

### Open Rivers Initiative

Over 2 million small dams block the life-preserving passage of migratory fish in U. S. streams and rivers. Dams provide numerous benefits for modern society, but they also contribute to the overall degradation occurring in estuaries, deltas, and river environments. With a life expectancy of about 50 years, scores of dams have outlived their usefulness--dilapidated and decrepit they have become a safety hazard and liability risk to communities. Meanwhile, these dams and aging culverts continue to block fish from their natal spawning grounds.

Many communities and private landowners want to remove dams they own, but often lack the resources to do so. The Open Rivers Initiative (ORI) is designed to help where funding is an issue. By providing grants to help remove these derelict barriers, the ORI aims to initiate an environmental and economic renewal in local communities.

Click [here](#) for a factsheet on the Open Rivers Initiative.

Click [here](#) for a press release on the announcement of the Open Rivers Initiative at the White House Conference on Cooperative Conservation.

Click [here](#) for Admiral Lautenbacher's remarks to Cooperative Conservation Conference.

### Dam Removal Success Stories

The NOAA Restoration Center has experience in removing obsolete and derelict stream barriers. Using a community-based model, NOAA has removed more than 80 dams and stream blockages, opening 700 miles of high quality river habitat for migratory fish. Below are a few success stories.



Removal of the West Henniker Dam in July 2004 (seen here in before and after shots) opened up a half-mile of stream habitat on the Contoocook River in New Hampshire.

**John Smith Creek Culvert Removal**--Mendocino County, California

In 2002, NOAA partnered with Mendocino Redwood Company, Trout Unlimited, the California Department of Fish and Game, and the California Conservation Corps to fix fish passage problems on John Smith Creek. The project restored habitat for endangered and threatened migratory fish while maintaining an economically important road structure.

**Mt. Scott Creek Dam Removal**--Happy Valley, Oregon

Miles of high-quality fish habitat in the Mt. Scott watershed have been blocked by dams and culverts constructed over the years. In 2002 NOAA worked with partners to remove a 30-year old earthen dam and reconstruct a stream channel, which provides habitat for spawning steelhead, coho salmon, cutthroat trout, and pacific lamprey. Fish surveys performed in 2003 indicate that fish use above the former dam has already increased.

**Steele's Mill Dam Removal**--Rockingham, North Carolina

NOAA, in partnership with the city of Rockingham, the North Carolina Department of Water Resources, and other resource agencies, is conducting a design and engineering study to assess the feasibility of removing the Steele's Mill Dam. Removing this 110 year old dam will open approximately 15 miles of quality river habitat for migrating fish.

**Wyomissing Creek Dam Removal**--Reading, Pennsylvania

In 2004, NOAA joined American Rivers, the National Fish and Wildlife Foundation, and the Reading Museum to remove two dams that have been blocking fish passage on Wyomissing Creek for nearly 80 years. The project restored habitat for wild brown trout, blueback herring, and American shad; and improved a natural and cultural resource for the citizens of Reading.

**Town Brook Dam Removal and Fish Ladder**--Plymouth, Massachusetts

In the 1790s, six dams were constructed on Town Brook, contributing to declines in anadromous fish populations. In an effort to save dwindling fish runs, with NOAA support, the town of Plymouth replaced a failing fish ladder at the Newfield Street Dam and entirely removed the Billington Street Dam. The projects will allow alewives and blueback herring to reach historic spawning grounds and will restore habitat for resident fish and birds.

**Sennebec Dam Removal**--Union, Maine

In 1916, the construction of Sennebec Dam blocked fish passage to over half of the 440 square mile St. George River watershed. In 2002, NOAA joined Trout Unlimited and other partners to remove the Sennebec dam, which was the last man-made barrier for anadromous fish on the river. With the dam removed, fish can now access 17 additional miles of the St. George River as well as 1100 acres of lake habitat in upstream Sennebec Pond and Quantabacook Lake.

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## Case Studies

### Bronx River Cement Plant Site Restoration

At one time, the Bronx River was so "pure and wholesome" that New York City officials considered using it to supply the city with drinking water. However, during the industrial revolution of the 19th century, the river valley was turned into an industrial corridor, and became what one official commission called an "open sewer." Due to the nearly complete channelization and armoring of its banks, the intertidal portion of the Bronx River shows little of the vegetation that once dominated its shores. Stretches of bulkhead, sheet piling, and historic filling and dumping have left the area with contaminated soils unsuitable for fish and shellfish.

In 1996, partnerships were formed to begin river restoration, including the restoration of the riparian and tidal areas along the lower part of the river, which is also the most urban. A property that once contained a working cement plant was chosen as a site that would be converted into a wetland and riparian plant nursery. Restoration of this site involved removing large blocks of concrete and debris, re-grading the banks, replacing invasive plant species such as the Japanese knotwood with native species, and installing coir mats loaded with cordgrass, a native species that prevents erosion better than its invasive counterpart.

"An extraordinary partnership of more than 70 community organizations, public agencies, and businesses is working together to restore the Bronx River to its full potential as a natural and community resource," said Linda Cox, Executive Director of the Bronx River Alliance and Bronx River Administrator for City of New York Parks & Recreation. "Our success in transforming a derelict concrete plant into a prized community asset exemplifies the progress we are making and the powerful effect that partnerships grounded in communities



This cement plant on the Bronx River is not only an eyesore, but it has also hindered functioning of the river's ecosystem.



Cordgrass is grown on mats near the cement plant. When they are ready, the mats are then moved into the river to recreate a brackish marsh.

- can have."

- 
- Partner organizations in this project include: The National Oceanic and Atmospheric Administration, the Wildlife Conservation Society, City Parks Foundation, City of New York Parks and Recreation Natural Resources Group, Bronx River Alliance Conservation Corps, Sustainable South Bronx, Youth Ministries for Peace and Justice, Rocking the Boat, Lehman College, The Point Community Development Corporation, New York City Environmental Justice Alliance and Fanny Lou Hamer High School.
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## Case Studies

### **Hawaii Coral Reef Native Algae Restoration:**

*Removing Alien Invaders Smothering Hawaii's Reefs*

Hawaii's reefs are home to an abundance of marine invertebrates and fishes, many of which are only found in Hawaii. One of the greatest threats to the coral reefs and other marine ecosystems is the spread of invasive, non-native marine algae, specifically *Gracilaria salicornia*, also known as gorilla ogo. This species of algae was once a source of agar, which was used as a solidifying agent in everything from ice cream to eye cream.

However, because it has no natural predators in Hawaii, it has begun to dominate the ocean floor, growing into thick mats covering swatches of the reef. As alien alga spreads, it grows over and smothers coral reefs and native algal communities, killing extensive areas of native habitat. Removing this alga from high priority coral reefs is key to the long-term survival of Hawaii's reefs and the abundance of life that thrives there.

"Algal blooms are becoming increasingly common worldwide and can decimate coral reef ecosystems by overgrowing corals and decreasing biodiversity. No efforts currently exist to control invasive algae in the tropics on such a large scale as our efforts in Hawaii," said Anne Rosa, Marine Conservation Project Coordinator for The Nature Conservancy of Hawaii. "To reach a greater scale, we have employed multiple strategies including the community-based initiatives of the Hawaii Coral Reef restoration project, as well as the development of new algae removal technology."



Non-native algae cover the beach in front of the Waikiki Aquarium after a swell. Local efforts have begun to remove the threatening algae from the area. (Photo credit: Jennifer Smith)

Volunteers, local communities, businesses, government agencies and other organizations are working together to remove *G. salicornia* from the beaches and waters and to begin to restore Hawaii's coral reefs. Native species restoration has begun in Kaneohe Bay and Waikiki, Oahu, and has evolved into one of the largest grassroots partnerships in the state. New mechanical and biological techniques for removing invasive algae has removed more than 88 tons of *G. salicornia* at more than a dozen events over the past three years.



Hundreds of volunteers helped to remove the invasive algae, *G. salicornia*, from beaches in Oahu. Because this alga has no natural predator in Hawaii, it has come to dominate coral reefs there. (Photo credit: Bruce Casler)

Partner organizations in this project include: The National Oceanic and Atmospheric Administration, The Nature Conservancy of Hawaii, State Division of Aquatic Resources, University of Hawaii, Waikiki Aquarium, Hawaii Institute of Marine Biology, the Hawaii Coral Reef Research Initiative, Coordinating Group on Alien Pest Species, the U.S. Fish and Wildlife Service, National Park Service, Reef Check, private dive operators, local businesses, local community groups, and schools.

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### **Northwest Straits Marine Conservation Initiative:**

*Restoring and Conserving Puget Sound*

Historically, Puget Sound in northwest Washington State has been habitat for a range of critical marine and anadromous species, and its fishery plays a vital role in the regional economy. By the mid-1990's, the quality of the fishery was rapidly degrading, threatening both marine and freshwater species, as well as human communities dependent on the natural resources of the Sound. In response to the environmental and economic crisis facing Puget Sound, Congress established a bottom-up, citizen-driven framework for conservation and restoration known as the Northwest Straits Marine Conservation Initiative. The Initiative was given a five-year window to show progress toward restoring, conserving, and protecting the Northwest Straits. During these five years, the Northwest Straits Commission and seven marine resource councils were charged with establishing community-based marine sanctuaries, conducting citizen-driven scientific studies on marine species and their habitat, and restoring marine habitat by removing abandoned commercial fishing debris from the marine floor.

According to a Congressionally mandated evaluation of the Northwest Straits Initiative, the project has met its targets and established itself as one of the most innovative and important experiments in citizen-based conservation in the United States. A citizen group has established and enforces a marine sanctuary, conducted research critical to the conservation of key salmon species, and succeeded in removing enormous quantities of fishing debris from the ocean that would otherwise threaten marine life.

"The Initiative's success thus far can serve as a foundation on which to build toward significant and sustained protection and restoration of marine resources in the Northwest Straits," said William Ruckelshaus, former EPA Administrator and Chair of the

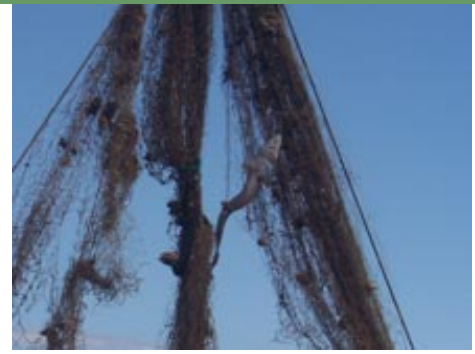


The Puget Sound fishery plays a significant role in the local economy. The Northwest Straits Marine Conservation Initiative was created to protect this important body of water.



evaluation.

Partner organizations in this project include: The National Oceanic and Atmospheric Administration, the Northwest Straits Commission, Clallam, Jefferson, Whatcom, Skagit, San Juan Island and Snohomish counties, Puget Sound Water Quality Action Team, Washington State Department of Ecology, Washington State Department of Fish and Wildlife, Washington State Department of Natural Resources, the U.S. Congress, and the U.S. Fish and Wildlife Service.



Since 1998, the Northwest Straits Marine Conservation Initiative has removed thousands of pounds of this gear.

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### **Olympia Oyster Restoration Project:**

*Re-seeding the Northwest's Only Native Oyster*

With natural habitat ranging from Alaska to Mexico, the Olympia oyster is the only oyster native to the Pacific Northwest. For thousands of years, the oyster provided sustenance for tribes, and habitat for a host of marine organisms. Because it is a filter feeder, it improves water quality as it filters food from the water. Until the end of the nineteenth century, it was the most abundant bivalve in the Puget Sound, but over-harvesting, sediment loads, and pollution have caused the near extinction of this oyster. Today, it is found in only a fraction of its former habitat and is a candidate threatened species in Washington State.



This oyster has many seeded oysters growing on its shell. Since 1999, more than five million Olympia oysters have been seeded.

"Any species with a story this rich is bound to attract collaborators," said Betsy Peabody, Executive Director of The Puget Sound Restoration Fund.

Since 1999, the Olympia Oyster Restoration Project has seeded more than five million oysters at 80 experimental sites across Puget Sound with assistance from over 100 partners. Of these sites, 64 involved private landowners planting oysters on their properties. An income-generating oyster farm is being developed to support future efforts.

Partnerships were formed to identify appropriate habitats for oyster restoration, modify substrate, propagate and seed the oysters, and to monitor the results. Seeding has been intensified where plantings showed promising results and the substrate has been improved by adding old oyster shells. A regional advisory group of shellfish farmers and scientists provides technical support and genetic research is being used to safeguard genetic integrity.



Scientists work to seed oyster beds in Puget Sound. Partnerships were formed to determine the best habitats for oyster

Partner organizations in this project

include: The National Oceanic and Atmospheric Administration, Puget Sound Restoration Fund, Washington Department of Fish & Wildlife, Taylor Shellfish Farms, the Skokomish, Squaxin, and Suquamish Indian Tribes, the Lummi Nation, N.W. Indian Fisheries Commission, U.S. Navy, Marine Resources Committees, Seattle Shellfish Company, Shell Puget Sound Refinery, 64 private tideland owners, and others.

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# NOAA Open Rivers Initiative

## What is the Problem?

Over 2 million small dams block the passage of migratory fish in U.S. streams and rivers. Dams provide numerous benefits for modern society, but they also contribute to the habitat degradation occurring in estuaries, deltas, and river environments. While most U.S. dams serve their intended functions, many no longer provide the benefits for which they were built. Still others have outlived their planned life expectancy and present known safety hazards and liability risks to communities. There are other barriers to fish passage as well. "Perched" culverts, whose downstream ends sit too high above the stream, block fish passage. Culverts that are too narrow, too steep, or collapsed can present impassible obstacles for migratory fish trying to reach their spawning grounds.

## Removing Dams and River Blockages

Using a community-based model, NOAA has removed more than 80 dams and stream blockages, opening 700 miles of high quality river habitat for migratory fish. These restoration projects provide significant environmental improvements (e.g. opening access to spawning habitat and improving water quality) and offer noteworthy economic and societal benefits. They create new opportunities for recreational fishing, river rafting, and kayaking; provide cost savings by eliminating the need for dam repairs; and remove safety and liability risks associated with outdated structures.

Removing dams and other barriers requires substantial time and effort because of environmental, safety, and sociocultural considerations. All barrier removal projects benefit from a collaborative process that engages a wide array of partners, including municipalities, state government, and private owners. Partnerships help build the tools, confidence, and interest required to achieve successful river restoration projects.

## NOAA's Open Rivers Initiative

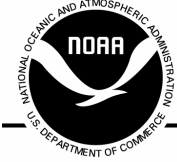
To help repair vital riverine ecosystems, to benefit communities, and to enhance populations of key trust species, NOAA plans to initiate a competitive grant program focused on community-driven, small dam and river barrier removals in coastal states. These efforts are expected to provide an economic boost for communities, enhance public safety, and improve populations of NOAA trust resources such as striped bass, Atlantic and shortnose sturgeon, Atlantic and Pacific salmon, American eel, American shad, blueback herring, and alewife. More information can be found at <http://conservationconference.noaa.gov>.



New Hampshire's West Henniker dam before removal.



New Hampshire's West Henniker dam during removal.



## **NEWS FROM NOAA**

**NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION • US DEPARTMENT OF COMMERCE**

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Contact: Jeff Donald  
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NOAA05-108  
**FOR IMMEDIATE RELEASE**  
August 31, 2005

### **BUSH ADMINISTRATION ANNOUNCES OPEN RIVERS INITIATIVE**

Retired Navy Vice Admiral Conrad C. Lautenbacher Jr., under secretary of commerce for oceans and atmosphere and NOAA administrator, today announced the Open Rivers Initiative (ORI), designed to spur economic and environmental renewal and improve public safety in small towns and communities. The initiative will provide grants to communities committed to removing obsolete and derelict stream barriers.

"Many small communities and private owners understand the benefits of removing these obstructions, but simply lack the funds to do so," said Lautenbacher. "This initiative is intended to help provide assistance where funding is an issue. We envision this initiative as an investment in our society, our economy and our ecological future."

There are an estimated 2½ million dams across the country, many less than six feet tall and some up to 200 years old. The ORI will target only those small dams where community consensus and the dam owners support removal, the dam no longer serves a useful purpose, and removal will have the greatest benefit to anadromous fish like salmon, striped bass and shad.

Many derelict dams pose a safety hazard, particularly to downstream communities; cause economic hardship for towns forced to pay for upkeep and liability; and disturb delicate ecosystems by preventing the free flow of water and species through the river. Removing dams and other blockages opens habitat for migratory fish and can help boost local economies by increasing property values and increasing recreational opportunities such as fishing and kayaking.

The ORI will be a grant program administered through the NOAA Office of Habitat Conservation. More information can be found at <http://conservationconference.noaa.gov>.

Under Secretary Lautenbacher made this announcement today at the White House Conference on Cooperative Conservation in St. Louis, Mo. The conference, convened by the White House Council on Environmental Quality, brought together a diverse group of leaders to discuss innovative and effective approaches to promoting cooperative conservation.

In August 2004, President Bush signed an Executive Order titled Facilitation of Cooperative Conservation which directs federal agencies that oversee environmental and natural resource policies and programs to promote cooperative conservation in full partnership with states, local governments, tribes, and individuals.

This conference reflects the President's continuing commitment to ensure that the federal government listens to the concerns, ideas and insights of local citizens and works closely with them in restoring and conserving our natural heritage.

###



**Prepared Remarks for  
VADM Conrad C. Lautenbacher, Jr., US Navy (Retired)  
At White House Conference on Cooperative Conservation  
August 31, 2005**

Good morning everyone, and thank you for being here.

Let me begin by conveying to all of you Secretary Gutierrez's sincere regrets that he could not join you today. President Bush asked the Secretary to take part in the Hurricane Katrina Reconstruction Task Force. So, the Secretary's duties prevented him from traveling to St. Louis.

This Conference marks a new opportunity to collaborate on preserving our natural resources for future generations. It's a priority issue for President Bush. It's a priority issue for this Administration.

Our goal is to broaden private-public partnerships that will enhance our environment. For the Department of Commerce, this conference is an opportunity to build on a century-old tradition. In 1903, the Fisheries Commission and fisheries conservation became a component of the newly created agency.

More recently, NOAA, the National Oceanic and Atmospheric Administration, has created a number of partnerships to foster cooperative conservation. Among these are programs on climate research, coral reefs and fisheries habitat restoration.

The NOAA Community-Based Restoration Program has been an amazing success story. Over the past five years, 16,000 habitat acres have been restored. Eighty stream blockages were removed. And 700 stream miles for fish passage were opened. To accomplish these milestones, the Restoration Program has worked cooperatively with local, state and private partners. We leveraged both financial and volunteer resources.

Today, I'd like to talk to you about an important new partnership proposal - it's the Open Rivers initiative. This is a cooperative program to remove obsolete barriers to free flowing rivers and fish passage.

Let me be specific. I'm talking primarily about dams that are in hazardous condition or no longer useful. I'm also talking about other barriers such as culverts that because of size and location are too frequently blocked. Most important, I'm talking about removing obstructions where the community is leading the charge.

Removal of such barriers can be an especially costly undertaking for local governments and private owners. In fact, there are dozens of dams around the country that have already completed the environmental review and permitting process. The communities recognize the benefits of removing these obsolete obstructions, but they don't have the resources to make it happen.

Our new initiative is intended to help provide assistance where this is the case. The key to the successful implementation of this program is a consensus among the people and communities affected. The impetus will come from the ground up.

Dams are a vital part of our national infrastructure. They are a critical source of economic, environmental and social benefits. The National Research Council estimates the total number of U.S. dams at 2.5 million. The vast majority are still valuable and functional.

And I want to say this as clearly as possible:

- First, we have no interest in pursuing removal of any dam that serves a useful purpose.
- Second, we have no interest in pursuing removal of any dam whose owner is not a willing partner.

The main reasons for dam removal are safety, environmental or economics. Often, it's all three.

Many dams are 50 years, 100 years, or older. Some of these are small dams, less than 6-feet tall. They were built for a variety of reasons: Many of them to establish recreation areas, some to create fire and farm ponds. Others for flood control, or irrigation, or water or energy supply. A number served multiple purposes.

But that was then. Today, for many, their original reason for being no longer applies. Some of these aging structures have high-hazard potential for anyone working or living nearby. Recent technology has reduced fatalities, but significant liability remains for dam owners.

Our initiative is intended for those projects where the community reaches a consensus. The motivation may be safety and/or to boost local economies. Removal can increase real estate values and recreational opportunities.

In addition to obsolete dams, there are other barriers to free flowing rivers. Our Open Rivers initiative is also aimed at these. For example, the sheer number of sewers or drains under roads, dikes, or other structures means access is closed to many miles of streams.

At the Commerce Department, we see removal of obsolete dams and other barriers as an additional tool in conserving and restoring our fish populations. It would especially benefit fish such as salmon, striped bass, and shad whose life cycle carries them through the river and the ocean.

Overall, we envision the new initiative as a partnership in cooperative conservation and an investment in our society, our economy and our ecological future. From reports we have seen, it's an investment that can produce real returns.

One of the restoration projects that we participated in was in Newport, Maine. Working with the State of Maine and the U.S. Departments of Agriculture and Commerce, Town Manager Jim Ricker led the effort to remove an obsolete dam.

He wanted to improve the safety of the people and the town. He wanted to reduce maintenance costs. And he wanted to increase available green space.

The removal of the Guilford Dam eliminated a potential safety hazard. It also restored a portion of the Sebasticook River.

This is leading to the renewal of the waterfront area, including increased fish populations, higher real estate values and more recreational areas for the community.

Jim has agreed to share his experience with us here today.

Jim, if you would please join me at the podium ... Ladies and Gentlemen, Newport, Maine, Town Manager Jim Ricker ...



# John Smith Creek Culvert Removal

## Mendocino County, California

### Highlight: John Smith Creek

John Smith creek is a 2-mile tributary to the Navarro River, which runs to the Pacific Ocean in Mendocino County on the North Coast of California. Historically, the river provided important habitat for coho salmon and steelhead. These anadromous fish returned to the Navarro River from the ocean in large numbers during the winter months, and were a major resource for the Native Americans that lived in the area. For most of the 20<sup>th</sup> century, commercial salmon fishing was a major economic driver throughout the Mendocino area, and its coastal rivers were also famous for their recreational fishing opportunities. These anadromous salmonids helped maintain forest and ecosystem health by bringing nutrients (themselves) from the ocean into watersheds where they spawned and died, which helped enrich the forests and wildlife that fed on their carcasses.

Much of the land on California's North Coast is managed for timber production. These forested areas also tend to be the most important habitats for salmon and steelhead populations. Salmon and steelhead are listed as Endangered and Threatened, respectively, on the Federal Endangered Species list. This presents challenges for the timber industry when attempting to balance resource conservation with economic growth. Mendocino Redwood Company exemplifies the potential compatibility that can be achieved between industry and conservation.

Beginning in the early 1900's a series of roads connecting major highways



and towns in Mendocino County were built to facilitate transportation. Where roads intersected streams, metal pipe culverts were installed to pass the streams under the newly built roads. At the time, no one knew that the structure of these pipe culverts would impair fish passage. As it turned out, many culverts scoured large drops at their outlets and fish were not able to make the heightened jump into them. In addition, water velocities inside these culverts were so fast that even if fish could make the jump, they would fail to swim against the strong current and fall out. These culverts thereby blocked salmonid access to hundreds of miles of spawning and rearing habitat in Northern CA counties, and were a major contributor to population decline in these species. In an effort to recover these important salmon and steelhead populations in the Navarro River, many culverts have been replaced with clear spanning structures such as bridges that do not interfere with channel dynamics and salmon and steelhead passage.

## GOAL

**Restore anadromous fish runs and habitat for salmonid fishes while maintaining an economically important road structure**

## CONTACT

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**National Oceanic and  
Atmospheric Administration**

# John Smith Creek Culvert Removal

*Mendocino County, California*

John Smith Creek contains some of the best salmonid habitat in the Navarro River Basin. Unfortunately, a culvert and road crossing at the confluence of John Smith Creek and the Navarro River was blocking fish access to John Smith Creek. The culvert was failing and there was an immediate risk of a giant blowout of the whole crossing if it was not repaired, which would introduce hundreds of yards of fine sediment into an already sensitive system. The road above the culvert was a main thoroughfare for Mendocino Redwood Company and could not be abandoned. Mendocino Redwood Company wanted to fix the culvert for maintenance and fish passage reasons, but did not have enough money to implement a solution for both problems.

In 2002, the NOAA Restoration Center partnered with Mendocino Redwood Company, Trout Unlimited, the California Department of Fish and Game, and the California Conservation Corps to fix the fish passage problem. The rusty culvert and hundreds of yards of road fill and the roadway were removed. The channel was reshaped, and an 89-foot clear span bridge was installed at the project site. The clear span bridge allowed natural channel movement and fluvial processes to resume, and opened access to approximately 1.5 miles of high quality spawning and rearing habitat for coho salmon and steelhead.

The winter after construction, salmon and steelhead were observed spawning and rearing upstream of the project site. Both species have returned to the stream by the hundreds every year since the project was completed. Rootwads and logs can now wash under the bridge and move through the system for the

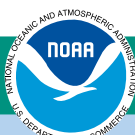
first time in more than 50 years. Vegetation colonized the banks, providing shade and habitat for fish.



Culvert at low flow



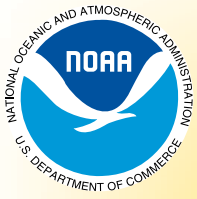
Culvert and bridge during removal and construction, respectively



## PROJECT PARTNERS:

- |  |   |
|--|---|
| ■ <b>California Conservation Corps</b> | ■ <b>Trout Unlimited</b>                        |
| ■ <b>Mendocino Redwood Company</b>     | ■ <b>California Department of Fish and Game</b> |





# Mt. Scott Creek Dam Removal

Happy Valley, Oregon

## Highlight: Mt. Scott Creek

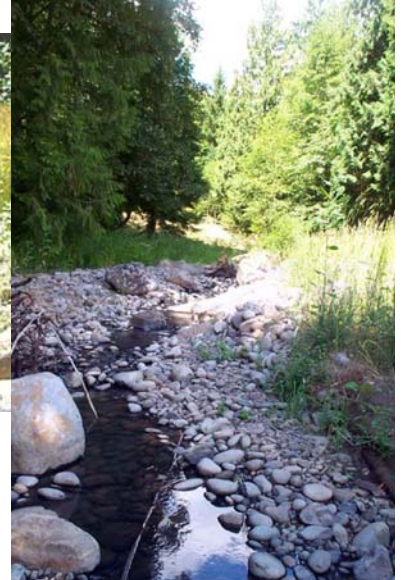
Miles of high-quality fish habitat in the Mt. Scott watershed have been blocked by culverts and dams constructed over the years. In 2002, Clackamas County Water Environment Services received a \$100,000 award from NOAA's Community-based Restoration Program (CRP) to improve fish passage and restore critical habitat in a section of Mt. Scott Creek in Oregon. The creek provides spawning and rearing habitat for steelhead, coho salmon, cutthroat trout, and pacific lamprey. The restoration project on Scott Creek was one of the final components of a watershed-wide undertaking to identify and remove fish passage obstructions.

Water Environment Services (WES) evaluated the feasibility of removing a small dam and accumulated sediments while restoring fish passage and riparian habitat in the headwaters of Mt. Scott Creek, a tributary of Kellogg Creek. The dam was constructed to create a pond for irrigation and fish culture in 1968. It was later used to detain stormwater runoff from a nearby housing development. The dam impeded fish passage while the containment pond contributed to warming of the creek during hot weather and provided substantial sediment contribution.

The dam that created the pond was an earth and rock-filled embankment about 16 feet high and 100 feet wide. The pond was surface drained through a gravity standpipe that exited through a pipe at the base of the dam. An overflow channel drained some water through subsurface flow. It is likely that this overflow channel was in-



Placement of boulders, cobble, gravel, and sand create the stream channel.



tended to pass fish; however, the dam was impassable to upstream migrating salmonids during low to moderate flows. It was also impassable to downstream migrating adults, except possibly during extreme flows when the overflow spillway was full.

The pond had a surface area of  $\frac{1}{4}$  acre, and a maximum depth of about 8 feet. During hot weather (roughly June through September), solar heating of the pond surface warmed the discharge water by at least a few degrees; thus warming the water temperature in the creek below the dam.

Fine sediment built up behind the dam was continually being released downstream through the structure's outfall. The dam was in a weakened condition which posed additional concerns, and its failure could have resulted in the entire load of fine sediment being released downstream during a high flow event. If this occurred, downstream spawning beds would have been completely choked with the fine sediment, resulting in long-term water quality problems in the watershed. Removing these fine

## GOAL

**Improve fish passage  
for steelhead, coho  
salmon, cutthroat  
trout, pacific lamprey**

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**National Oceanic and  
Atmospheric Administration**



# Mt. Scott Creek Dam Removal

*Happy Valley, Oregon*

sediments during the dam removal prevented the sediment from being released, and restored riparian habitat in the stream channel.

In 2002, work began to remove the 30-year-old earthen dam and reconstruct a stream channel through the former reservoir area. Removing the dam restored anadromous and resident salmonid fish passage to Mt. Scott Creek above the pond and improved downstream water quality as well. The project reopened 3.2 miles of stream to anadromous fish passage, and reduced water temperatures. Crews dewatered the pond and used soil, rock material, and woody debris to create a new stream channel. They stabilized the channel banks with heavy burlap and covered loose soil with compost. More than 150 volunteers planted 1700 native trees and shrubs on the site during two tree-planting events.

The project is currently in monitoring and maintenance mode. Temperature reduction goals were met almost immediately following the dam removal and are continually monitored with temperature sensors placed up- and downstream of the project site.

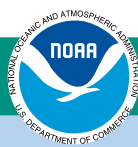
In February, 2002, participants in the tree planting events, including volunteers from the local nonprofit Friends of Trees, learned about the resources of Mt. Scott Creek, and how to protect water quality by making small changes in their daily activities in and around their homes. The site is now being used by Spring Mountain Elementary School as a field laboratory for children to learn about watersheds and water quality.

Fish surveys performed in 2003, indicate that fish use above the former dam is already increasing. In addition to opening 3.2 miles of fish passage for threatened salmon and steelhead, the project created 500 linear feet of stream channel and established a 75-100 foot riparian zone around the channel. A conservation easement

belonging to Clackamas County Service District #1 protects the entire project area.

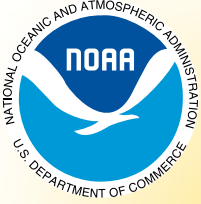


Juvenile coho, a species that benefits from the dam removal



## PROJECT PARTNERS:

- **Clackamas County Water Environmental Services**
- **Clackamas County Service District**
- **Friends of Trees**



# Steele's Mill Dam Removal

## Rockingham, North Carolina

### Highlight: Hitchcock Creek

Populations of diadromous fish, such as shad, herring, and sturgeon have declined over the years due to a variety of factors, including the loss of habitat. Barriers to migration, such as dams are a major cause of this loss. Dams have a devastating impact on diadromous fish by impeding their upstream and downstream migration, thereby blocking important spawning, feeding, and rearing areas. Dams can also cause a decline in the quality of riverine habitat by increasing predation, altering chemistry and flow patterns, increasing water temperature, and reducing available flow downstream.

While many existing dams provide important services, such as water storage and power generation, there is an ever-increasing population of structures that are either abandoned or have ceased operation. Removal of these derelict structures presents an opportunity to provide a significant increase in vital habitat for diadromous fish.

Taking a step in this direction, the NOAA Restoration Center, in partnership with the City of Rockingham, the North Carolina Department of Water Resources, and other resource agencies, is taking the lead on the removal of Steele's Mill Dam near Cordova, N.C. This 110 year old dam is a 100-foot wide by 15-foot tall stone gravity structure situated on Hitchcock Creek, approximately one mile upstream from the creek's confluence with the Pee Dee River.



In 1999, the dam ceased power generation and the reservoir behind the dam was drawn down to its current size of .33 acres. Since that time, a 20-foot wide channel above the dam has reformed and the surrounding banks of the former impoundment have stabilized and become covered with dense vegetation. In 2001, the Federal Energy Regulatory Commission (FERC) issued an exemption from licensing to operate a power generating facility.

Historic records indicate that American shad and American eel lived within Hitchcock Creek. Other species, such as hickory shad, striped bass, Atlantic sturgeon, and the federally-listed shortnose sturgeon migrate up the nearby Pee Dee River annually. Removal of this dam, which is the first blockage on Hitchcock Creek, will open access to approximately 15 miles of riverine habitat, providing an opportunity for the migration of these diadromous fishes and numerous other aquatic

## GOAL

**Restore diadromous fish runs for hickory shad, striped bass, Atlantic sturgeon; enhance a natural and cultural resource for the citizens of Rockingham, NC**

## CONTACT

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**National Oceanic and  
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# Steele's Mill Dam Removal

*Rockingham, North Carolina*

organisms while at the same time restoring the ecological services synonymous with an unimpeded river.

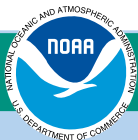
Currently, the NOAA Restoration Center is conducting a design and engineering study that will assess the feasibility of removing the dam. If deemed appropriate, the State of North Carolina has committed to funding the actual dam removal through its competitive bid process. This project is one element of a larger vision advanced by the local community to enhance the Hitchcock Creek Watershed. To complement this project, local interests are developing a comprehensive water quality enhancement plan and the City of Rockingham has intentions to acquire and restore the 90-acre impoundment behind the dam, develop public access, and construct a city park. Additional restoration initiatives within the Hitchcock Watershed are being considered, including the prescription of fish passage at Midway Dam, which lies two miles upstream from Steele's Mill Dam.



Steele's Mill Dam, North Carolina



View from atop the dam

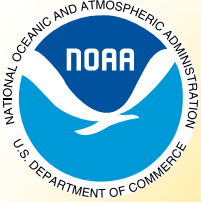


## PROJECT PARTNERS:

■ **City of Rockingham**

■ **North Carolina Department of Water Resources**





# Wyomissing Creek Dam Removal

## Reading, Pennsylvania

### Highlight:

### Wyomissing Creek

Reading, Pennsylvania sits more than 100 miles from the coast. However, it is connected to Delaware Bay by a 30-mile waterway, Wyomissing Creek. In the 1920s, two small dams were erected along the creek to create a shallow reflecting pond on the Reading Public Museum property in Reading, Pennsylvania. Although it was once aesthetically pleasing, the pond created ecological problems and became a maintenance nuisance. The Reading Public Museum decided to remove the dams and return Wyomissing Creek to a natural state. NOAA's Community-Based Restoration program, American Rivers, and the National Fish and Wildlife Foundation joined together with the Reading Museum to fund the dam removal project in 2004.

The project involved a multi-disciplinary approach to restore natural riverine functions and habitats along a reach of the creek that passed through museum property. The project doubled as an attempt to revitalize a public area that was once an historical focal point for Reading Public Museum and the City of Reading.

Wyomissing Creek historically supported populations of anadromous fish which migrated to areas near Reading in search of spawning habitat. The two low-head dams that created the reflecting pond prevented diadromous and resident fish passage along Wyomissing Creek for nearly 80 years. Removal of the dams opened up approximately 1800 linear feet of stream reach (400 linear feet which was impounded).



Restoration enhanced a natural park area for environmental education which supported the museum's curriculum and charter. Other activities on the museum's property included:

- enhancing 6.3 acres of riparian forest buffer
- restoring the stream ecosystem along with diversity and abundance of native species within the proposed site
- eliminating a public safety hazard
- eliminating nuisance waterfowl populations by draining impoundments
- improving park infrastructure including the incorporation of signage and other public education curricula
- developing an attractive public natural area for use by museum visitors and general public (including anglers and outdoor recreational enthusiasts)

The contractor in charge of the project was able not only to remove the dams, but also reduced the

## GOAL

**Restore anadromous fish runs for wild brown trout, blueback herring, and American shad; provide a natural and cultural resource for the citizens of Reading, PA**

## CONTACT

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# Wyomissing Creek Dam Removal

*Reading, Pennsylvania*

unnaturally straight lines of the creek through the park. Heavy equipment reshaped the creek into a natural, sinuous waterway and added rock material to create riffles and natural pools. Since the dam removal, the contractor completed further instream enhancements along the creek. In addition, the Reading Public Museum's Master Gardeners created a riparian buffer zone along the stream channel.

Pre- and post-dam removal monitoring of water quality, habitat quality, and biotic communities will evaluate the project's success. This monitoring will also provide much-needed data about the impacts of dam removal on stream ecosystem restoration.



Stream enhancements in progress



Dam removal during deconstruction



## PROJECT PARTNERS:

- American Rivers
- National Fish and Wildlife Foundation
- Pennsylvania Department of Environmental Protection
- Pennsylvania Fish and Boat Commission
- Reading Public Museum
- USDA Natural Resources Conservation Service
- US Fish and Wildlife Service





# Town Brook Dam Removal and Fish Ladder

Plymouth, Massachusetts

## Highlight: Town Brook

Town Brook is a 1.5-mile stream that runs from the Billington Sea, a 269-acre freshwater pond, to Plymouth Harbor in Plymouth, Massachusetts. Historically, the river provided important anadromous fish runs for alewives (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), and rainbow smelt (*Osmerus mordax*). Herring were an important food for the native Americans and are also believed to have sustained the early European settlers. According to legend, Squanto showed the Pilgrims how to plant herring as fertilizer with corn seeds, likely using fish from Town Brook.

Today, blueback herring and alewives are still an important component to sport and commercial fisheries in New England. However, due to a variety of factors including overfishing, habitat degradation, and urban development, anadromous fish populations severely declined.

Beginning with the Billington Street dam in the 1790's, six dams were constructed on Town Brook, contributing to declines in fish populations. While each dam has been outfitted with fish ladders, two were in such disrepair that fish were still unable to migrate upstream unaided.

Town Brook currently supports an annual run of approximately 7,000 herring, which is far below the stream's estimated capacity. In efforts to save the dwindling anadromous fish run, the Massachusetts Division of Marine Fisheries had for the past 15



Billington  
Street Dam  
and fishway

years been capturing and trucking fish around the dams, releasing them at their spawning grounds upstream.

With assistance from the NOAA Community-based Restoration Program, the Town of Plymouth took the lead to restore fish passage on Town Brook through replacement of a fish ladder at the Newfield Street Dam and through a dam removal and stream restoration project at the Billington Street Dam. At Newfield Street, the lower 30 feet of the notched fishway had deteriorated and was replaced with an aluminum Alaskan Steeppass Fishway in 2001. The Billington Street dam was constructed in the 1790's on Town Brook as a foundation for the Holms and Packard Anchor Forge mill. The mill burned down in the 1960's leaving the 70-foot long and 110-foot wide earthen dam behind. The brook was formerly carried through a 4 by 67-foot metal culvert under the dam and emptied into a nonfunctional fish ladder. Lead and asbestos were found at the site and the contaminated soils

## GOAL

**Restore  
anadromous fish  
runs for alewife,  
blueback herring,  
and rainbow smelt**

## CONTACT

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**National Oceanic and  
Atmospheric Administration**



# Town Brook Dam Removal and Fish Ladder

## Plymouth, Massachusetts

had to be removed prior to deconstructing the dam. Both the dam and the non-functioning fish ladder were removed in 2002 as part of a training exercise by the 368th Engineering Battalion (Heavy) of the US Army Reserves. The stream was then regraded and cobbles were added to mimic the downstream and upstream habitat and to recreate riffles and pools. Native riparian and wetland vegetation was planted along the restored stream in the spring of 2003.

Restoring fish passage at Town Brook will allow alewives and blueback herring to reach historic spawning grounds and restore habitat for resident fish and birds. Removing the Billington Street Dam was the first dam removal in Massachusetts for anadromous fish passage and provides a precedent for future dam removals for fish passage in the state.

Throughout the project, community support was important in promoting stewardship and involvement. Students from the Plymouth Community Intermediate School News Team were actively involved in video-documentation of the project's progress and an intermediate school student monitored the brook before and after the dam removal as part of a science fair project. High school and college students also helped to remove debris from the stream. And, local Boy Scouts maintain a covered footbridge near the Billington Street Dam.

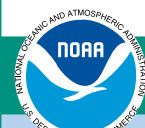
The Town Brook corridor was highlighted during a Biodiversity fair in 2001, where visitors were informed about the importance of the river to the survival of the Pilgrims. The Town of

Plymouth maintains a nature trail named the Pilgrim Trail along Town Brook and hopes to create an educational walkway along the stream.

The total cost for the project was approximately \$550,000. This project is part of a larger effort to restore anadromous fish runs on Town Brook and create a green-way with an integrated nature trail stretching from Billington Sea to Plymouth harbor. Additional anadromous fish run restoration projects are currently being considered at Jenny Grist Mill and Brewster Gardens.



US Army Reserves help remove the Billington Street Dam



## PROJECT PARTNERS:

Town of Plymouth  
American Rivers  
Battelle Marine Science Laboratory  
Coastal America  
FishAmerica Foundation  
Inland Fisheries Committee

Massachusetts Coastal Zone Management  
Massachusetts Division of Marine Fisheries  
Massachusetts Watershed Initiative  
Massachusetts River Restore Program  
National Resource Conservation Service

US Environmental Protection Agency  
Town Brook Alliance  
US Army Reserves  
US Fish and Wildlife Service



# Sennebec Dam Removal

Union, Maine

## Highlight: St. George River

The St. George River, located in central Maine, flows through Knox and Waldo Counties with a drainage area of 440 square miles. Historically, the river supported important anadromous fish runs for fish such as Atlantic salmon (*Salmo salar*), alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), American eel (*Anguilla rostrata*), and American shad (*Alosa sapidissima*).

However, with construction of the Sennebec Dam in Union, Maine in 1916, fish passage to over half the watershed was blocked, eliminating a significant amount of nursery and spawning area for anadromous fish. The dam, originally constructed as part of a hydroelectric facility, was sold in the 1960's to the Sennebec Pond Association, who has since used it solely to maintain lake levels in Sennebec Pond, just upriver from the dam site. Today, the St. George River still hosts a significant alewife run, which supports a local commercial fishery, supplies lobster bait, and provides forage for many birds and sportfish including striped bass (*Morone saxatilis*), bluefish (*Pomatomus saltatrix*), and largemouth bass (*Micropterus salmoides*).

At the end of the 20th century, Sennebec Dam represented the last man-made barrier for anadromous fish on the St. George River. So the NOAA Community-based Restoration Program and Trout Unlimited took the lead to remove Sennebec Dam and restore anadromous fish passage on the St. George River.



Sennebec Pond, a naturally occurring lake behind the dam, is an important area for recreational swimming, boating, and fishing for the local community, so care was taken to maintain lake levels. The 12-foot high, 200-foot wide dam was removed in 2002, and replaced with a rock fish ramp 2000 feet upstream at the pond's natural outlet. The rock fish ramp recreates natural riffles and pools for fish help them swim upstream. Removing the dam also provided greater safety from potential flooding.

With the removal of Sennebec Dam, fish can now access 17 additional upstream miles of the St. George River as well as 1100 acres of lake habitat in Sennebec Pond and Quantabacook Lake. Over a quarter mile of impounded river was also restored to natural riverine conditions. The total cost of this project was \$270,000.

## GOAL

**Restore  
anadromous fish  
runs of Atlantic  
salmon, alewife,  
blueback herring,  
American eel, and  
American shad**

## CONTACT

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**National Oceanic and  
Atmospheric Administration**

# Sennebec Dam Removal

Union, Maine

Since the removal of the dam and creation of the rock ramp, alewife, smallmouth bass (*Micropterus dolomieu*), and brown trout (*Salmo trutta*) have been observed swimming successfully upstream over the ramp and into Sennebec Pond. Water levels at Sennebec Pond have been successfully maintained for recreational use. In addition, the restored section of river adds to recreational opportunities as it provides an easily-accessible white water run for canoeists and kayakers during spring high water. It has also become a popular angling area for brown trout.



Construction of the roughened ramp



Dam removal complete



## PROJECT PARTNERS:

- |                                    |   |                                       |
|------------------------------------|---|---------------------------------------|
| ■ American Rivers                  | ■ Maine Department of Marine Resources  | ■ St. George Chapter, Trout Unlimited |
| ■ Coastal Conservation Association | ■ Maine Corporate Wetlands Restoration Partnership (Maritimes & Northeast Pipeline) | ■ Sennebec Pond Association           |
| ■ FishAmerica Foundation           | ■ National Fish and Wildlife Foundation   | ■ US Fish and Wildlife Service        |
| ■ Gulf of Maine Council            | ■ Natural Resources Conservation Service  | ■ Jack Tibbetts                       |
| ■ Maine Atlantic Salmon Commission | ■ River Rehab, Inc.   | ■ Ed Collins                          |